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Safety Precautions

Notational

The following are basic precautions to ensure user safety and reduce the risk of property damage. Please read this carefully and follow the precautions at all times for proper use of the device.



Warning / Caution

Warning : This symbol indicates explanations about extremely dangerous matters.
If users ignore this symbol and handle the device the wrong way, serious injury or death could result.

Caution : This symbol indicates explanations about dangerous matters.
If users ignore this symbol and handle the device the wrong way, damage to home or property could result.

Notational

	Failure to follow directions noted by this symbol could result in bodily harm or damage to equipment.
	Prohibited
	Important to read and understand at all times
	Do not disassemble

	Any change or modification not expressly approved by designated qualified personnel could avoid your authority to operate this device.
	Always make sure that the disc does not have a crack before use. If the disc has a crack (especially around the center hole), it is recommended to make a copy immediately and use the copy instead. When a cracked disc is used continuously, the size of the crack is likely to grow and this will eventually result in irreparable damage to the disc.
	Important to read and understand at all times.

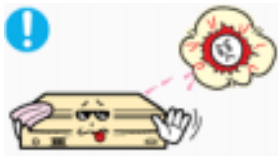
Safety Precautions

Installation

When you install the drive



- ✦ Place the drive on a level surface.
- Failure to do so may cause the device to fall onto a hard surface, resulting in damage or malfunction.



- ✦ Do not place the drive in direct sunlight.



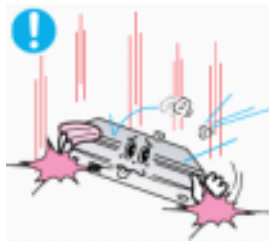
- ✦ Avoid low- or high-temperature environments.



- ✦ Avoid high-humidity environments.

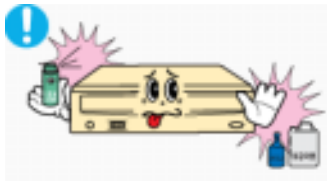
Safety Precautions

While Operating

While Operating	
	⌘ Handle with caution to prevent damage from external shock.
	⌘ Do not drop the drive, and protect it from severe shocks. - It can damage the drive or cause it to malfunction.
	⌘ Do not move the drive while in operation and do not attempt to open the disc tray by force. - Make sure to close all working programs before attempting to open the tray and always use the open/close button. - Do not insert a pin into the emergency opening while in operation.
	⌘ Do not use cracked, distorted or damaged discs. - In particular, a disc with a crack on the inner tracks may break while in use.

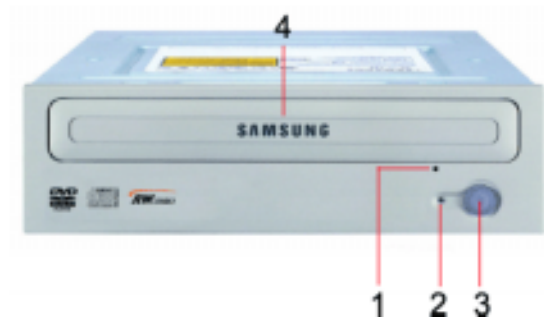
Safety Precautions

Other

Other	
	* Never allow food particles or foreign substances to enter the drive casing.
	* To protect against the risk of fire, do not spill such liquids as alcohol and benzene on the drive.
	* Do not disassemble, attempt to repair or modify the device without express approval as directed in the manual. - To reduce the risk of damage, electric shock, and fire,

Introduction

Front



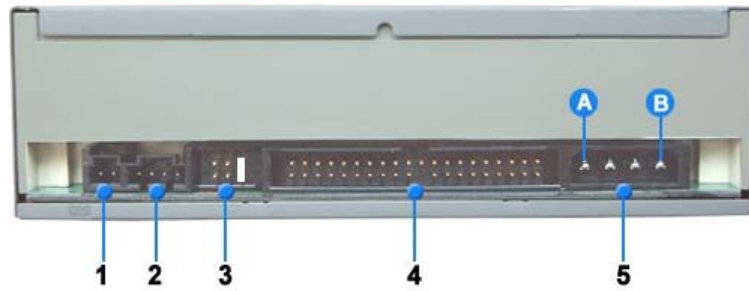
1. Emergency eject hole. (If the compartment does not open when you press the Eject button, power off the computer, insert a pin or unfolded paper clip in the hole and push firmly)
2. Indicator Light.
3. Eject button.
4. Disc compartment. (The compartment opens and closes automatically when you press the Eject button)



Design and specifications are subject to change without prior notice.

Introduction

Rear



1. Two-pin digital audio output terminal for use with a sound a MPEG card supporting digital audio features.
2. Four-pin sound output terminal for use with a sound card. (refer to the sound card documentation for further details)
3. Master/slave select terminal.
4. 40pin host E-IDE interface connector.
5. 4pin power terminal.
(A : +5V DC)
(B : +12V DC)

Setup

Installing the COMBO Drive

Installing the COMBO Drive

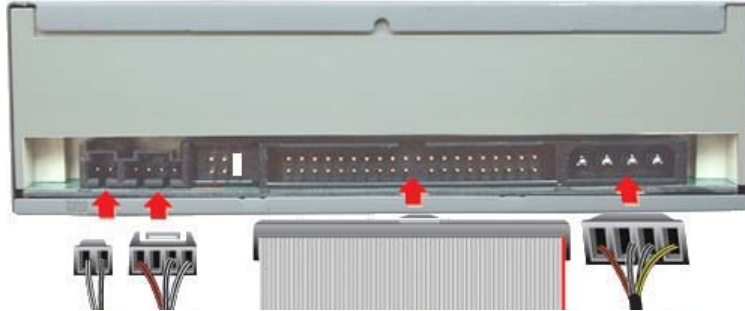


- 1.** Make sure that the PC is powered off and disconnected from any power source.
- 2.** If necessary, attach a horizontal bracket to both sides of the drive.
- 3.** Remove the cover from a free expansion slot and install the COMBO drive, as shown in the illustration.

Setup

Connecting the Cables

Connecting the Cables



1. Connecting the power cable

- The 4-pin power cable from the internal power unit of your computer must be connected to the power terminal on the rear of the Optical drive.

A - Cut Side	1 +5V DC 2 Ground 3 Ground 4 +12V DC

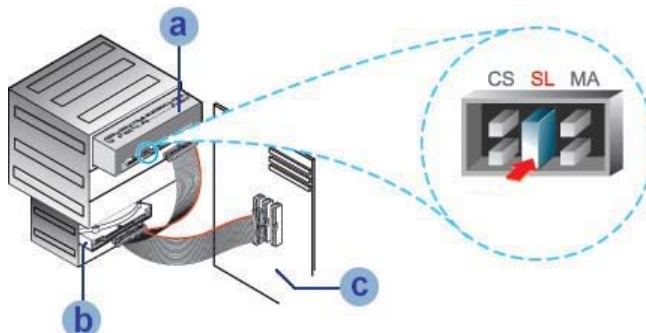
Note: An improperly connected power cable may cause trouble. Check the direction of the power connector and the incline side of the Optical drive before connecting.

2. Connecting the E-IDE cable

Insert the IDE cable (40-pin), which is connected to the hard disk to the interface terminal.
(Place the red line of the cable close to the Pin 1.)

When using one E-IDE cable

Connect the cable to the SL (Slave) of the Master/Slave Select Terminal at the rear of the Optical drive.



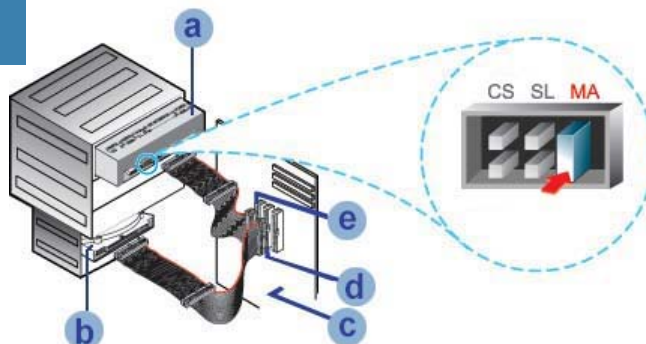
a	: Slave Drive (Choose the SL Jumper)
b	: Hard Drive
c	: MainBoard

When using two E-IDE cable

- If there is only one Optical drive, select MA (Master).

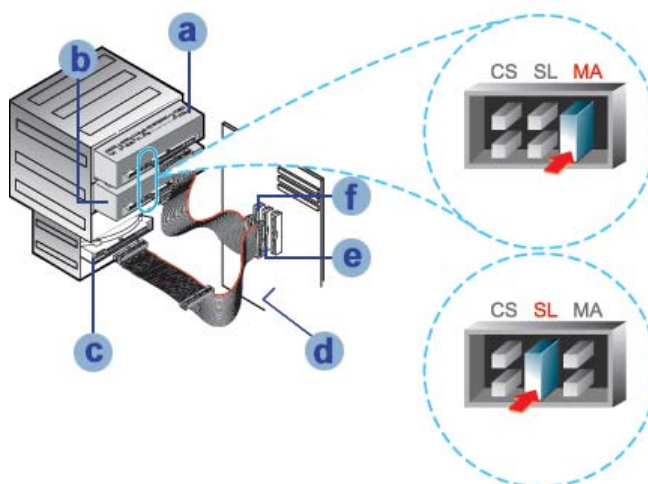
Setup

Connecting the Cables



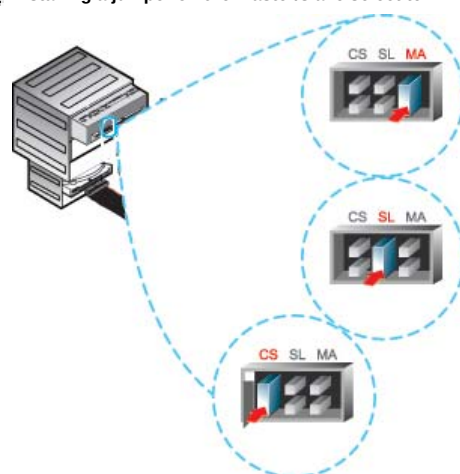
a : Master Drive (Choose the MA Jumper)	b : Hard Drive
c : MainBoard	: Primary 1
e : Secondly 1	

✦ If there is two Optical drive, select MA (Master) / SL (Slave).



a : Master Drive (Choose the MA Jumper)	b : Slave Drive (Choose the SL Jumper)
c : Hard Drive	d : MainBoard
e : Primary 1	f : Secondly 1

3. Installing a jumper on the master/slave select terminal



Connect a jumper to the rear side of the COMBO.

If the jumper is connected to MA (Master), it will work in the Master mode.

If the jumper is connected to SL (Slave), it will work in the Slave mode.

If the jumper is connected to CS (CSEL), you can control the device by using the host interface signal CSEL. (In general, connection to MA is recommended.)

4. Connecting the audio cable from a sound card

- ✦ Connect the 4-pin audio cable between the sound output terminal on the Optical drive and the audio input terminal on the sound card.
- ✦ For clearer sound, use a digital output terminal. (Available only for the CAID that supports digital output) This may not be available for general sound cards.

Setup

Installing the CD Record Utility

■ Installing the CD Record Utility

To record data on a CD-R or CD-RW disc in the COMBO drive, you must first install the CD record utility. For compatibility reasons, you are recommended to uninstall any existing software of the same type before installing this utility.

1. Insert the disc supplied with the COMBO drive in the drive.
2. Follow the instructions displayed on the screen to install the utility.
Refer to the separate utility documentation for further details.
3. Store the utility disc in a safe place.

Setup

Installing the Device Driver

Installing the Device Driver

No additional device driver is needed for Windows 98/2000/ME/XP/NT4.0, as the default Windows device driver is used. You can check that the COMBO drive has been correctly detected by Windows. To do so, proceed as follows.

- 1.** Double-click on the **My Computer** icon on your desktop.
- 2.** Double-click on the **Control Panel** folder.
- 3.** Double-click on the **System** icon.
- 4.** Click on the Device **Manager** tab.
- 5.** Expand the CD-ROM branch.
The **SAMSUNG COMBO SM - ***** device name is displayed.

The SAMSUNG device driver enables discs in the COMBO drive to be read but not recorded in an MS-DOS environment; the driver is located in the D driver folder on the CD record utility disc.

Setup

Setting Up the Device Driver

■ Setting Up the Device Driver

> Automatic Setup

The device driver is located in the Ddriver folder of the CD Record Utility disc which is provided in the package.

1. Insert the **CD Record Utility** disc into the CD-ROM drive and open the **Ddriver** folder.
2. Run the **CDSETUP.EXE** file in the **Ddriver** folder.
3. When Setup is successfully completed, click **OK** button or press the **Enter** key.
4. Reboot the computer.

> Manual Setup

1. Make the **C:\SAMSUNG** directory.
2. Copy the files from the diskette to the **C:\SAMSUNG** directory.
To do so, type **COPY D:\Ddriver *.* C:\SAMSUNG** after the **C:** prompt and press **[Enter]**.
3. Edit the **CONFIG.SYS** file.
Add the **DEVICE=C:\SAMSUNG\SSCDROM.SYS ID:SSCD000/V** entry.

```
LAST DRIVE = Z
*****
DEVICE = C:\SAMSUNG\SSCDROM.SYS ID:SSCD000/V
```

4. Edit the **AUTOEXEC.BAT** file.
Add the **C:\SAMSUNG\MSCDEX/D:SSCD000** entry.

```
*****
C:\SAMSUNG\MSCDEX/D:SSCD000
```

5. Reboot the computer.

Using the Drive

Using the COMBO Drive

■ Using the COMBO Drive

To play audio or video CDs and / or DVDs in your COMBO drive, proceed as follows.



1. Push the power button and boot the computer.
2. After booting the computer, open the disc compartment by pressing the Eject button.
3. Insert the disc (CD/DVD) with the label on the disc facing upwards and close the disc compartment by pressing the Eject button. The indicator light comes on.
4. Play the disc (CD/DVD).
5. Accessories
 - The type of accessories varies depending on product model.



Audio cable.



User Manual & Setup Guide.



Software.



Screws.

Playing DVDs or Video CDs

Set up and run the SOFT MPEG program supplied as an accessory.

Using the Drive

Storing and Cleaning Your Discs

• Storing and Cleaning Your Discs

To ensure a long service life for your discs and drive, follow the pre-cautions below when storing and cleaning your discs.



1. Do not place a disc in direct sunlight.
2. Store a disc vertically in a well-ventilated and stable location.
3. Do not write or attach a label on a disc.
4. Do not drop a disc or place heavy objects on it.
5. Do not touch the surface of a disc; hold it by the edges.
6. To clean a disc, polish lightly from the inside of the disc to the outside with a soft cotton cloth.
7. Do not leave the disc compartment open when you are not using it.

Using the Drive

Upgrading the Firmware Flash Memory

■ Upgrading the Firmware Flash Memory

The product firmware can be upgraded by downloading the updated file from the following Web site:
[Http://samsung.com](http://samsung.com)
[Http://samsung-ODD.com](http://samsung-ODD.com)

Using the Drive

System Requirements

System Requirements

Before you install the COMBO drive, we strongly recommend that you check that your setup meets the system requirements listed below.

Item	Description
Computer	Intel Pentium II 400MHz/Celeron 466A(or higher), 128 MB of RAM (or higher) with an 80pin IDE interface for Ultra DMA.
Free expansion unit	5.25 inch
Disk space	700 MB minimum
Windows version	Windows 98/2000/ME/XP/NT4.0 (or higher) (For Windows NT, we recommend Service Pack2, and Version is over 4.00.1381)
MS-DOS	5.0 or higher (For MS-DOS, The CD-R/CD-RW driver can only read a disc without premaster Software.)
DVD Video playback	PC with Windows 98/2000/ME/XP/NT4.0 DVD-Video playback software and appropriate hardware (the Power DVD MPEG software is included in the COMBO drive package)

DVD Region Protection Coding (RPC):

The RPC feature is supported on DVD players and is used with DVD-video discs (such as movies). Currently, the motion picture industry has divided the world into different regions or zones that correspond to the regional markets into which the motion picture industry releases movies. Simply put, RPC codes are placed on movies marketed throughout the world, based on the region of the world in which they are being sold. These RPC codes help control and prevent pirating of new movies into other motion picture regions prior to their true release dates within those markets.

The SM-352N COMBO drive supports RPC phase II. In the RPC-2 mode, the local code can be changed by users. RPC-2 is selected by default for the SM-352N COMBO drive. You can change the region code up to five times via an MPEG application.

Please contact your dealer or local SAMSUNG representative if you wish to change the local code more than five times.

Troubleshooting

Solving Recording Problems

- » Hard Drive
- » Network Drive
- » CD-ROM Drive

If you have any problems in recording via your COMBO drive, follow the appropriate instructions below for the source that you are using.

■ Hard Drive

1. Check whether the source file is corrupted.
2. Optimize the hard disk by using the Windows defragmenter feature:
START / PROGRAMS / ACCESSORIES / SYSTEM TOOLS / DISC DEFRAGMENTER
3. Decompress the hard disk if it is compressed.
4. Make sure that the space available on the hard disk is at least twice the size of the largest file to be recorded on the disc.
5. If you wish to record more than 1000 small files:
 - First create an image file and copy the image file to the disc
 - Choose the low record speed
 - Compress small files and then record them

■ Network Drive

1. Copy the network drive contents to the hard disk and then from the hard disk to the COMBO drive.

■ CD-ROM Drive

1. Clean the source CD, if necessary.
2. Create an image file and then copy the image file to the COMBO drive.
3. Check the CD-ROM drive record speed.
There are two recording methods :
 - Low-speed (file by file)
 - High-speed (transfer of an image file from the hard disk)
4. If the transfer speed of the CD-ROM drive is slower than the record speed, reduce the record speed.

Note

The COMBO Drive provide a High Speed rewriting Disc recording function (CD-RW 24X, 32X). To rewrite at a High speed, use the disc which High Speed is printed on.

Ultra Speed : 16X, 24X, 32X
High Speed-RW : supporting 10X
General-RW : supporting 4X

Troubleshooting

Caution with errors

»	Caution with errors
»	Term Description
»	Recommended Disc Types

■ Caution with errors

Every CD-RW or COMBO drive records data by applying recording laser onto a CD.
If the CD is damaged or recording data is not possible to you need to remove the following causes of the error

➤ It is recommended to set a CD-RW or COMBO drive as follows.

1. Do not work on a multi-tasking environment and remove screen savers.

- If you work on a multi-tasking environment while the COMBO drive is recording/deleting data, Buffer Under-Run may occur.

2. Do not allow any external access to the Host PC while recording data.

- If another user accesses your printer through a network while you are recording data, errors may occur.

3. Remove the Auto-Run function of the CD.

- If you insert a CD that has the Auto-Run function to a drive connected to a PC while recording/deleting data, this may cause errors.

■ **How to cancel (select) the Auto-Run function**

Cancel (Select) the Auto-Run function in
[Start > Setting > Control Panel System > Device Manager > CD-ROM Setting]

4. Use image files when you record many small files.

- If you use a lot of small size files for recording, this may reduce the transaction rate of the PC. Although Super link function is often run, the recording quality may become low.
- If you copy a CD from another, you do not require making available space in the hard disk. However, when you use image files, you need to copy them on the hard disk first and then copy to a CD. In this case, you need to ensure maximum 700MB of available space in the hard disk for reliable recording process.

5. Use an E-IDE cable, which has the specified length (46cm).

- Using E-IDE cables longer than 46cm may cause errors during data transaction.

6. Use only one recording software program.

- To install a software program for recording, uninstall any other types or versions of recording software programs first and then reboot the computer.
- Make sure you use the recording software CD (Nero Burning Rom / Roxio Easy CD Creator) provided by us. Using our software program with others may cause errors in recording.

■ Term Description

1. What is Buffer Under-Run?

- Every CD-RW or COMBO drive records the data that the Host PC wants to record until the data flow ends.
However, if the buffer becomes empty temporarily, this may cause errors in recording data.

2. What is Auto-Run?

- If inserting a CD into a drive, the operating system executes the Autorun.inf file of the CD automatically.

3. What is Super link?

- This function is to check the buffer to see if there are data while recording.
If the buffer is empty, it waits at the address and then restarts recording after the buffer is full. You can avoid Buffer Under-Run problems by applying the above-mentioned principle.

Troubleshooting

Caution with errors

Recommended Disc Types

CD-R MCC, PRO, TDK, FUJI, SKC, MAXELL, MPO, BEALL
CD-RW RICOH, SONY, MITSUBISHI, NANYA



General DMA Installation Guide Windows 98/Me

Important!

Please read the entire DMA installation guide before installing your COMBO drive.

About DMA Installation

For stable writing performance at high speeds, Installation of DMA transfer mode for E-IDE/ATAPI interface is strongly recommended. We recommend DMA mode for fast writing.

DMA Setting

Before you install your COMBO drive, we recommend to set DMA to enabled on your PC system. See the following procedure to set DMA transfer mode in windows operating system.
(Windows 98/ME)

- | | |
|--|--|
| + Click on START | + Select your COMBO drive |
| + Click on Settings | + Click on the Properties button |
| + Select Control Panel | + Click on the Settings tab |
| + Select the System Icon | + Check the DMA checkbox to enables DMA. |
| + Select the Device Manager panel in System Properties | + Click OK |
| | + Restart your PC |
| + Expand the CD-ROM icon | |

Windows 2000/XP

Select the DMA mode by selecting

[Start > Setting > Control Panel > System > Device Manager > IDEATA/ATAPI Controller > Default/Assistant IDE Channel Advanced Information]

Troubleshooting

Solving Technical Problems

Problem	Meaning / Solution
The COMBO drive is not detected by the computer. After installing the COMBO drive, the PC gets slower.	Check that the power, audio and IDE cables are correctly connected to the computer.
	Change the IDE cable and reconnect it to the computer. Preferably, connect a second IDE cable to the COMBO drive in master mode.
	Check the position of the jumper in the master/slave select terminal.
The COMBO drive is not recognized by MS-DOS.	Reinstall the device driver or update it with the latest version by downloading it from the Samsung Web site. - Http://samsung.com - Http://samsung-ODD.com
The COMBO drive is not detected by Windows.	This case may occur when there is a Windows installation problem; reinstall Windows.
No sound is heard from an audio CD.	Check whether the audio cable is correctly connected to the sound output terminal on the COMBO drive and the sound card CD-IN terminal.
	Check that the sound card is operational.
	Adjust the volume control in Windows.
	Run the CD player supplied with Windows or your sound card.
A CD is not read or is read too slowly.	Check whether the CD is of good quality and clean it, if necessary.
The disc compartment will not open.	Check that the power cable is correctly connected.
	Power off and disconnect the PC. Insert a pin or unfolded paper clip in the emergency hole and push firmly until the disc compartment opens.
When the MPEG software plays a Video CD, the pictures are not regular and the running speed is too slow.	Adjust the size of the replay screen.
	After checking the display resolution, adjust it, if necessary.
The Disc is not in message is displayed even though a disc has been inserted.	The computer may not recognize the disc if you start playback too quickly after inserting the disc. Open and close the disc compartment and try again.
	Clean the disc and try again.
The COMBO drive is not detected after it is connected to a sound card.	The interface mode of the sound card is AT-BUS. You must therefore connect the COMBO drive to the IDE port on the PC mother board, rather than to the sound card, or install an E-IDE compatible sound card.

Specifications

Specifications



SAMSUNG continually strives to improve its products. Both the design specifications and these user instructions are thus subject to change without notice.

Technical Specifications

ITEM		CD-RW	DVD/CD
DISC	Disc types supported in read mode	DVD-ROM, DVD-RAM, DVD-VIDEO, DVD-R, DVD - RW, CD-DA (Audio), CD-ROM, CD-ROM XA, CD-Plus, CD-Extra, Photo-CD (Single, Multi-session), Video CD ready, Enhanced CD, CD-I/FMV, CD-R, CD-RW, CD-TEXT	
	Erasing disc types	CD-RW	
	Disc diameter	120 mm or 80 mm	
DRIVE PERFORMANCE	Data transfer rate	Recording	CD-R: 7800 KB/sec. (52X), 7200 KB/sec. (48X), 6000 KB/sec. (40X), 4800 KB/sec. (32X), 3600 KB/sec. (24X), 2400 KB/sec. (16X), 1800 KB/sec. (12X), 1200 KB/sec. (8X), CD-RW : Ultra Speed Writing DISC: 4800 KB/sec. (32X), 3600 KB/sec. (24X), 2400 KB/sec. (16X), High Speed Writing DISC: 1500 KB/sec. (10X), Low Speed Writing DISC: 600 KB/sec. (4X),
		Reading	CD: CAV 52 CD-R, CD-RW: CAV 40 DVD: CAV 16 PIO mode 4 : 16.6MB/sec, Multiword DMA mode 2:16.6MB/sec, Ultra DMA mode 2:33.3MB/sec
		Access time	130ms
		Data Buffer	2MB
	Laser	Semiconductor laser	
	Slide mechanism	Stepping motor	
	Spindle motor	Brushless motor	
	Load mechanism	Tray. DC motor (Soft Eject). Horizontal/Vertical.	
	ERROR RATE	Mode 1: 1 block/10 ⁻¹² , Mode 2: 1 block/10 ⁻⁹	
	FRONT PANEL		
REAR PANEL	Eject button	Auto eject or Auto inject	
	Indicator	If the Power is ON/BUSY, this means the disc is loaded. Green: Reading/Recording Status	
	Required power	+5 V : 1.2 A (rms), +12 VDC: 1.5 A (rms)	
	Interface connector	ATAPI (E-IDE)	
OPERATING ENVIRONMENT	Audio output	Line out 0.7V ± 20% : 47Ω	
	Jumper block	Molex 70203 or other compatible models	
	Operations	Temperature: 5~45°C Humidity: 10~80%	
GENERAL	Storage	Temperature: -25~60°C Humidity: 10~90%	
	Dimensions	148.2 (W) x 42 (H) x 184 (D) mm (including bezel)	
RELIABILITY	Net weight	750 g	
	MTBF	125,000 POH(Duty 20%)	